

Appl. No. 10/564,584
Amdt. Dated February 12, 2009
Reply to Office Action of November 12, 2008

Amendments to the Drawings:

The attached sheet of drawings

Attachment: Replacement Sheet

REMARKS

In the Office action dated November 12, 2008, the Examiner: objected to the drawings under 37 CFR 1.83(a) for not showing all claimed features and 37 CFR 1.84(p)(4) for incorrect reference numerals; rejected claims 1-6, 8-16, 33, 35-39 and 42-46 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention; rejected claims 44-46 under 35 U.S.C. § 102(a) as anticipated by *Dietz et al.* (U.S. 2002/0108747); rejected claims 1-5, 33, 35, 37, 42 and 43 under 35 U.S.C. § 103(a) as being unpatentable over *Dietz et al.* in view of *Giese* (U.S. 1,852,562); rejected claims 6 and 39 under 35 U.S.C. § 103(a) as being unpatentable over *Dietz et al.* in view of *Giese* and further in view of *Flinchbaugh et al.* (US 4,398,110); rejected claims 8 and 9 under 35 U.S.C. 103(a) as being unpatentable over *Dietz et al.* in view of *Giese* and *Flinchbaugh et al.* as applied to claim 6, and further in view of *Campbell* (US 3,261,591); rejected claims 10-13, 15, and 16 under 35 U.S.C. 103(a) as being unpatentable over *Dietz et al.* in view of *Giese* as applied to claim 1, and further in view of *Yie* (U.S. 4,862,911); and rejected claims 36 and 38 under 35 U.S.C. § 103(a) as being unpatentable over *Dietz et al.* in view of *Giese* as applied to claims 1 and 3 above respectively, and further in view of *Hommel* (US 6,208,923).

Amended Drawings

With respect to the Examiner's objection to the drawings under 37 CFR 1.83(a) for not showing the claimed features, "double helical gear" in claim 9 and "surface power source" in claim 44, Applicant draws the examiner's attention to the double helical gear 22 shown in Figure 1 and discussed in paragraph 55. The power source has been deleted from claim 44. With respect to the Examiner's objection to the drawings under 37 CFR 1.84(p)(4) for incorrect reference numerals, the reference number for the code carrier has been changed from "69" to "70." Further, the reference numeral "15" used for the toothed sleeve in paragraph 55 has been changed in the specification to "14." These amendments are seen as overcoming the Examiner's objections to the drawings.

35 U.S.C. § 112

The claims have been amended to overcome the rejections under § 112, second paragraph. With respect to claim 1, the preamble has been reworded to delete the phrases "such as" and "in particular." With respect to claim 3, claim 3 has been made dependent upon claim 2 to provide antecedent basis for "the spindle drive." With respect to claim 4, claim 4 has been made dependent

upon claim 3 to provide antecedent basis for "the threaded spindle." With respect to claim 5, claim 5 has been amended to depend from claim 3 to provide antecedent basis for "the spindle nut." With respect to claim 6, "a" has been substituted for "the" to provide antecedent basis for "the harmonic drive gear." With respect to claim 8, claim 8 has been amended to depend from claim 6 to provide antecedent basis for "the harmonic drive gear" and claim 8 has been otherwise amended to clarify "the spur gear." With respect to claim 9, claim 9 has been amended to depend from claim 2 to clarify "the spur gear." With respect to claim 11, claim 11 has been amended to delete the words "is assigned." With respect to claim 12, claim 12 has been made dependent upon claim 10. With respect to claim 16, "an" has been substituted for "the" to provide antecedent basis for "the intermediate reservoir." With respect to claim 35, claim 35 has been dependent upon claim 16 to provide antecedent basis for "the pump housing." the word "a" has been substituted for the word "the". With respect to claim 38, claim 38 has been amended to delete the "is assigned." With respect to claim 43, claim 43 has been amended to delete the second "of the piston." With respect to claim 44, "the power" and "the power source" have been deleted from claim 44. These amendments are seen to overcome the rejections under § 112, second paragraph.

35 U.S.C. § 102

Claims 44-46 are rejected as anticipated by *Dietz et al.* Claim 44 has been amended to include a piston-cylinder unit having a piston with a cylinder. The Examiner has stated in paragraph 27 that *Dietz et al.* does not teach the details of a pump and does not teach a piston-cylinder unit. Claims 44 and 46 are dependent upon claim 44 and therefore are allowable for the reasons stated with respect to claim 44. Further with respect to claim 45, claim 45 has been amended to include the cylinder of the piston-cylinder unit communicating with the hydraulic source. Further with respect to claim 46, claim 46 has been amended to include a piston-cylinder unit and electrical drive device adapted for releasable connection to the body of the subsea tree. For these reasons, claims 44-46 are in allowable form.

35 U.S.C. § 103

Claims 1-5, 33, 35, 37, 42 and 43 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Dietz et al.* in view of *Giese*. A rejection under 35 U.S.C. § 103(a) must be based on the following factual determinations: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) any objective indicia of nonobviousness. The presented rejections fail to meet the threshold requirements of a *prima facie* case of obviousness of claims 1 and 43. In applying these principles it is important

to note that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *Black*, 2008 WL 3852722 *3; *Power-One*, 556 F. Supp. 2d at 595. "This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *KSR Intern. Co.*, 127 S. Ct. at 1741. USPTO Memorandum dated May 3, 2007, directed to *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007), states that the Supreme Court rejected the rigid application of the "teaching, suggestion, or motivation" test but did not totally reject the use of "teaching, suggestion, or motivation" as a factor in an obviousness determination to combine multiple prior art references. The Supreme Court noted that the analysis supporting a rejection under 35 U.S.C. § 103(a) should be made explicit, and that it was "important to identify a reason that would have prompted a person of ordinary skill in the relevant art to combine the [prior art] elements" in the manner claimed. *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (Examiner can satisfy burden of obviousness in light of combination "only by showing some objective teaching [leading to the combination]"). Combining prior art references without evidence of such a reason that would have prompted a person of ordinary skill in the relevant art to combine the prior art elements in the manner claimed simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability - the essence of hindsight. See, e.g., *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985) ("The invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time."). Id. at 6. Applicants respectfully submit that the Examiner has not identified any reason for one skilled in the art to combine *Dietz et al.* and *Giese*. "Rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR*, 127 S.Ct. 1727 (2007), 82 USPQ2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).

With respect to claims 1 and 43, the Examiner states in paragraph 27 that *Dietz et al.* does not teach the details of the pump 102 and thus does not teach a piston-cylinder unit. *Giese* is cited as teaching these limitations. *Dietz et al.* is directed to a fail safe surface control subsurface safety valve for use in a well. Claims 1 and 43 are directed to a pump device for the hydraulic actuation of a valve for a pipeline or a tree used in the production of crude oil or natural gas. The fail safe surface controlled subsurface safety valve of *Dietz et al.* is mounted in the downhole production string below

the wellhead. *Giese* is directed to a mud or clay gun for plugging and tapping holes of a blast furnace to shut off the flow of molten metal and slag. The Examiner has not provided any "teaching, suggestion, or motivation" as to why a person of ordinary skill in the relevant art would combine a reference teaching a fail safe surface control subsurface safety valve for the oilfield with a mud or clay gun for plugging and tapping holes of a blast furnace to shut off the flow of molten metal and slag. The art is completely different. Further, the Examiner has not identified "a reason that would have prompted a person of ordinary skill in the relevant art to combine the [prior art] elements" in the manner claimed.

Still further, claim 1, as amended, is distinguishable over *Giese*. *Giese* discloses a cylinder frame 10 having a nozzle 11 on one end and a piston 27 mounted on a sleeve and screw nut. An electric motor 50 rotates a screw shaft 19 causing screw nut 20 to move longitudinally upon rotation of the screw shaft 19 by motor 50. A filling hole 12 is provided between the nozzle 11 and piston 27 for filling the cylinder with mud or clay. The Examiner has stated in paragraph 43 that neither *Dietz et al.* nor *Giese* teach a piston chamber having a suction and a discharge hole. *Giese* does not teach a piston travelling to a first position forcing hydraulic fluid in the cylinder out the first port in the direction of the valve under pressure and traveling to a second position drawing hydraulic fluid through the second port and into the cylinder. The filling hole 11 is closed by closure 13 and locked by lock 14. Mud or clay is not drawn into cylinder frame 40 as piston 27 is retracted.

Claims 2-5, 33, 35, 37, and 42 are dependent upon claim 1 and are allowable for the reasons given with respect to claim 1. Further with respect to claims 2 and 5, gear 49 is not seen as a reduction gear. With respect to claim 3, *Giese* does not teach an axially immovable threaded spindle nut threadingly engaging an axially movable threaded spindle. With respect to claim 4, *Giese* does not teach a threaded shaft as a threaded spindle. With respect to claim 33, *Giese* does not teach a pump device that is of modular construction. With respect to claim 35, the threaded joint 47 connects the upper section 37 and lower section 39 of downhole production string 35. See paragraph 14. With respect to claims 37 and 42, Applicant cannot find where *Dietz et al.* states that the hydraulic fluid is an injection fluid.

Further with respect to independent claim 43, the Examiner has expressed the view that one skilled in the art would expect that this motion both could and would occur upon the hydrocarbons reaching a predetermined pressure. Applicant disagrees with this view, and motivated by the case of *In Re Ahlert and Kruger*, 165 USPQ 418 (CCPA 1970) Applicant hereby challenges this view and asks the Examiner to show support for this view. Still further,

Giese does not teach a sensor for sensing the hydraulic fluid pressure in the cylinder, a pressure switch receiving signals from the sensor, or the pressure switch activating a relief valve upon the pressure in the cylinder reaching a predetermined value.

The Examiner rejected claims 6 and 39 under 35 U.S.C. § 103(a) as being unpatentable over *Dietz et al* in view of *Giese* and further in view of *Flinchbaugh et al*. Claim 6 is dependent upon claims 1 and 3 and claim 39 is dependent upon claims 1, 3 and 5 and therefore these claims are allowable for the reasons given with respect to the claims from which they depend. Further with respect to claim 6, nut 47 of *Giese* cannot serve as the claim spindle nut of claim 6. With respect to claim 39, Applicant could not locate a reduction gear taught by *Flinchbaugh et al*. that is a harmonic drive gear and the Examiner did not identify the gear taught by *Flinchbaugh et al*. that the Examiner considers a reduction gear that is a harmonic drive gear. Further, Applicants respectfully submit that the Examiner has not identified any reason for one skilled in the art to combine *Dietz et al.*, *Giese*, and *Flinchbaugh et al.*. "Rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR*, 127 S.Ct. 1727 (2007), 82 USPQ2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).

The Examiner rejected claims 8 and 9 under 35 U.S.C. 103(a) as being unpatentable over *Dietz et al.* in view of *Giese* and *Flinchbaugh et al.* as applied to claim 6, and further in view of *Campbell*. Claim 8 is dependent upon claims 1 and 2 and claim 9 is dependent upon claims 1, 2 and 8 and therefore these claims are allowable for the reasons given with respect to the claims from which they depend. Applicants respectfully submit that the Examiner has not identified any reason for one skilled in the art to combine *Dietz et al.*, *Giese*, *Flinchbaugh et al* and *Campbell*. Further, the Examiner has expressed the view that one skilled in the art would be aware of the presence of helical and double helical spur gears in the art and that they would be suitable for an application such as transferring rotation between the drive shaft to the piston. Applicant disagrees with this view, and motivated by the case of *In Re Ahlert and Kruger*, 165 USPQ 418 (CCPA 1970) Applicant hereby challenges this view and asks the Examiner to show support for this view.

The Examiner rejected claims 10-13, 15, and 16 under 35 U.S.C. 103(a) as being unpatentable over *Dietz et al.* in view of *Giese* as applied to claim 1, and further in view of *Yie*. Claims 10-13, 15, and 16 are dependent upon at least claim 1 and therefore these claims are

allowable for the reasons given with respect to the claim 1. Applicants respectfully submit that the Examiner has not identified any reason for one skilled in the art to combine *Dietz et al.*, *Giese*, and *Yie*. With respect to claim 10, the suction hole opens into an intermediate reservoir of the pump device not taught by *Yie*. The chamber of the valve 24 of *Yie* is not seen as a reservoir of hydraulic fluid. Claims 11-13, 15 and 16 are dependent upon claim 10 and therefore are allowable for the reasons given with respect to claim 10. With respect to claim 11, *Yie* does not teach non-return valves in a first member with a cylinder bottom plate releasably attached to the first member. With respect to claim 12, *Yie* does not teach a cylindrical bottom plate including a branch connected to a pressure switch. With respect to claims 13 and 16, *Yie* does not teach a suction hole that opens into an intermediate reservoir of the pump device with its end facing away from the piston. With respect to claim 15, *Yie* does not teach a discharge pipe that passes in the direction of a valve.

The Examiner rejected claims 36 and 38 under 35 U.S.C. § 103(a) as being unpatentable over *Dietz et al* in view of *Giese* as applied to claims 1 and 3 above respectively, and further in view of *Hommel*. Claim 36 is dependent upon claim 1 and claim 38 is dependent upon claims 1-3 and therefore these claims are allowable for the reasons given with respect to the claims from which they depend. Applicants respectfully submit that the Examiner has not identified any reason for one skilled in the art to combine *Dietz et al.*, *Giese*, and *Hommel*. With respect to claim 36, neither *Giese* nor *Hommel* teach an electric motor and two servomotors providing redundancy for the electric motor. With respect to claim 38, *Hommel* teaches a position sensor for a rack and pinion steering system and not for a threaded spindle.

New claim 47 has been added to further claim the present invention

CONCLUSIONS

During the course of these remarks, Applicant may have at times referred to particular limitations of the claims that are not shown in the applied prior art. This short-hand approach to discussing the claims should not be construed to mean that the other claimed limitations are not part of the claimed invention. They are as required by law. Consequently, when interpreting the claims, each of the claims should be construed as a whole, and patentability determined in light of this required claim construction. Applicant reserves the right to submit the original claims or any cancelled rejected claims in a continuing application and prosecute those original claims fully

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without regard to any amendments made to those claims in the present application. Applicant does not give up any scope of the original claims due to the claims amendments or cancellations in the present application.

If the Examiner has any questions or comments regarding this communication, he is invited to contact the undersigned to expedite the resolution of this application.

If a petition for extension of time is necessary in order for this paper to be deemed timely filed, please consider this a petition therefore. If any fee is due for such a petition or should any additional fees be required with respect to this application, the Commissioner is authorized to charge such fees to Deposit Account Number 03-0335 of Cameron International Corporation.

Respectfully submitted,

/David A. Rose/
DAVID A. ROSE
Reg. No. 26,223
CONLEY ROSE, P.C.
P. O. Box 3267
Houston, Texas 77253-3267
(713) 238-8000
ATTORNEY FOR APPLICANT

CAMERON INTERNATIONAL CORPORATION
P. O. Box 1212
Houston, Texas 77251